# CLAIMS

What is claimed is:

1. A method for allocating and reallocating management responsibility of manageable entities to agents in a managed information network comprising:

detecting a manageable entity requiring assignment of an agent for management responsibility of the manageable entity;

identifying a manageable entity type of the manageable entity requiring reassignment of management responsibility;

identifying a set of deployed agents in the managed information network, each of the agents having an agent type and operable to manage at least one manageable entity of a particular manageable entity type;

applying failover rules using the identified type of the manageable entity, the agent type of the managing agent and the compatibility associations to determine a primary agent from among the identified set of deployed agents for managing the manageable entity; and

informing the determined primary agent of the responsibility for managing the manageable entity.

2. The method of claim 1 further comprising defining the failover rules, the failover rules for designating, based on the type of the agent, failover agents types operable to manage the manageable entities corresponding to the agent type, the failover rules further responsive to compatibility associations between the manageable entity types and the agent types.

3. The method of claim 2 wherein defining the failover rules further comprises:

identifying each agent type for which a failover is operable; and

for each identified agent type, defining an ordered failover chain of agent types compatible to manage the manageable entities corresponding to the identified agent type, the ordered failover indicative of a priority of agent types, and compatibility determined by the compatibility associations.

4. The method of claim 2 wherein defining the failover rules further comprises defining an ordered set of rules, the ordered set of rules following a precedence.

5. The method of claim 4 wherein defining the precedence further comprises defining the priority order comprising: 1) failover chain, 2) highest agent version, 3) best logical distance to manageable object, and 4) lowest management load.

6. The method of claim 5 further comprising applying the failover rules by applying the rules according to the precedence, wherein if a rule results in multiple compatible agents operable to manage the manageable entities, applying the next rule in the precedence.

7. The method of claim 4 wherein best logical distance further comprises determining logical characteristics including at least one of network hops, network proximity, discovered access data parameters, remote data facility connections, and local/remote status.

8. The method of claim 4 wherein applying the failover chain further comprises:

identifying manageable objects operable to be reallocated to another agent from a former agent;

scanning the failover chains to determine a failover chain owned by a matching agent type of the agent type of the former agent;

parsing the determined owned failover chain to compute the next agent type in the failover chain; and

determining, from the computed agent type, available agents to receive management of the manageable entities.

9. The method of claim 8 further comprising:

if the determining available agents results in a deterministic agent, assigning management responsibility to the determined agent; and

if the determining results in a plurality of available agents,

iteratively applying the failover rules until a deterministic agent for assigning management responsibility is found.

10. The method of claim 1 wherein detecting a manageable entity operable for assignment is preceded by steps comprising:

monitoring the status of existing agents; and at least one of;

detecting emergence of a new agent;

detecting emergence of a new manageable entity;

detecting failure of an existing agent;

detecting unavailability of an existing agent;

detecting recovery of an existing agent; and

detecting availability of an existing agent.

11. The method of claim 1 wherein informing further comprises:

transmitting a primary designation message to the determined primary agent to indicate management responsibility for the identified manageable entity; and

removing an indication of a former managing entity as having management responsibility for the identified manageable entity.

12. The method of claim 1 wherein the agent types further include a hybrid agent operable to manage manageable entities of a plurality of manageable entity types.

13. The method of claim 1 wherein the compatibility associations further include designations of agent types to corresponding manageable entity types, the designations further comprising:

dedicated agent types, wherein a dedicated agent is operable to manage a particular type of manageable entity;

hybrid agent types, wherein a hybrid agent is operable to manage a plurality of manageable entity types;

common interface agent types, wherein a common interface agent is operable to manage a manageable entity conversant in a common information model; and

lightweight agent types, wherein a lightweight agent is operable to manage manageable entities for a subset of available manageable entity operations.

14. The method of claim 11 wherein the subset of available manageable entity operations include database and file system operations.

15. A network management server having a network management application for allocating and reallocating management responsibility of manageable entities to agents in a managed information network comprising:

a failover processor;

a memory;

an interface operable to communicate with agents, manageable entities, and network elements, the failover processor operable to detect a manageable entity requiring assignment of an agent for management responsibility of the manageable entity;

a compatibility association table for identifying a manageable entity type of the manageable entity requiring reassignment of management responsibility;

an agent configuration table operable to store information to identify a set of deployed agents in the managed information network, each of the agents having an agent type and operable to manage at least one manageable entity of a particular manageable entity type;

a set of failover rules, the failover processor operable to apply the failover rules using the identified type of the manageable entity, the agent type of the managing agent and the compatibility associations to determine a primary agent from among the identified set of deployed agents for managing the manageable entity, the failover processor further operable to inform the determined primary agent of the responsibility for managing the manageable entity.

16. The network management server of claim 15 wherein the failover rules are further adapted to designate, based on the type of the agent, failover agents types operable to

manage the manageable entities corresponding to the agent type, the failover rules further responsive to compatibility associations between the manageable entity types and the agent types.

17. The network management server of claim 16 wherein the failover processor is further operable to:

identify each agent type for which a failover is operable; and

for each identified agent type, process an ordered failover chain of agent types compatible to manage the manageable entities corresponding to the identified agent type, the ordered failover indicative of a priority of agent types, and compatibility determined by the compatibility associations.

18. The network management server of claim 17 wherein the failover processor is further operable to apply the rules according to a precedence order defined by the priority comprising: 1) failover chain, 2) highest agent version, 3) best logical distance to manageable object, and 4) lowest management load, wherein if applying a rule results in multiple compatible agents operable to manage the manageable entities, applying the next rule in the priority.

19. The network management server of claim 18 wherein the failover processor is operable to compute the best logical distance by determining logical characteristics including at least one of network hops, network proximity, discovered access data parameters, remote data facility connections, and local/remote status.

20. The network management server of claim 18 wherein the failover processor is further operable to:

identify manageable objects operable to be reallocated to another agent from a former agent;

scan the failover chains to determine a failover chain owned by a matching agent type of the agent type of the former agent;

parse the determined owned failover chain to compute the next agent type in the failover chain; and

determine, from the computed agent type, available agents to receive management of the manageable entities.

21. The network management server of claim 20 wherein the failover processor is further selectively operable to:

if determining available agents results in a deterministic agent, assign management responsibility to the determined agent; and

if determining results in a plurality of available agents,

iteratively apply the failover rules until a deterministic agent for assigning management responsibility is found.

22. The network management server of claim 15 wherein the failover processor is operable to:

monitor the status of existing agents; and at least one of

detect emergence of a new agent;

detect emergence of a new manageable entity;

detect failure of an existing agent;

detect unavailability of an existing agent;

detect recovery of an existing agent; and

detect availability of an existing agent.

23. The network management server of claim 15 wherein the failover processor is operable to:

transmit a primary designation message to the determined primary agent to indicate management responsibility for the identified manageable entity; and

remove an indication of a former managing entity as having management responsibility for the identified manageable entity.

24. The network management server of claim 15 wherein compatibility association table is indicative of agent types corresponding manageable entity types, the agents further comprising:

dedicated agent types, wherein a dedicated agent is operable to manage a particular type of manageable entity;

hybrid agent types, wherein a hybrid agent is operable to manage a plurality of manageable entity types;

common interface agent types, wherein a common interface agent is operable to manage a manageable entity conversant in a common information model; and

lightweight agent types, wherein a lightweight agent is operable to manage manageable entities for a subset of available manageable entity operations.

25. A computer program product having a computer readable medium operable to store computer program logic embodied in computer program code encoded thereon for allocating and reallocating management responsibility of manageable entities to agents in a managed information network comprising:

computer program code for detecting a manageable entity requiring assignment of an agent for management responsibility of the manageable entity;

computer program code for identifying a manageable entity type of the manageable entity requiring reassignment of management responsibility;

computer program code for identifying a set of deployed agents in the managed information network, each of the agents having an agent type and operable to manage at least one manageable entity of a particular manageable entity type;

computer program code for applying failover rules using the identified type of the manageable entity, the agent type of the managing agent and the compatibility associations to determine a primary agent from among the identified set of deployed agents for managing the manageable entity; and

computer program code for informing the determined primary agent of the responsibility for managing the manageable entity.

26. A computer data signal for allocating and reallocating management responsibility of manageable entities to agents in a managed information network comprising:

program code for detecting a manageable entity requiring assignment of an agent for management responsibility of the manageable entity;

program code for identifying a manageable entity type of the manageable entity requiring reassignment of management responsibility;

program code for identifying a set of deployed agents in the managed information network, each of the agents having an agent type and operable to manage at least one manageable entity of a particular manageable entity type;

program code for applying failover rules using the identified type of the manageable entity, the agent type of the managing agent and the compatibility associations to determine a primary agent from among the identified set of deployed agents for managing the manageable entity; and

program code for informing the determined primary agent of the responsibility for managing the manageable entity.

27. A network management server having a network management application for allocating and reallocating management responsibility of manageable entities to agents in a managed information network comprising:

means for detecting a manageable entity requiring assignment of an agent for management responsibility of the manageable entity;

means for identifying a manageable entity type of the manageable entity requiring reassignment of management responsibility;

means for identifying a set of deployed agents in the managed information network, each of the agents having an agent type and operable to manage at least one manageable entity of a particular manageable entity type;

means for applying failover rules using the identified type of the manageable entity, the agent type of the managing agent and the compatibility associations to determine a primary agent from among the identified set of deployed agents for managing the manageable entity; and

means for informing the determined primary agent of the responsibility for managing the manageable entity.